Pagophagia in a Female with Recurrent Depressive Disorder: A Case Report with Review of Literature

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SUMMARY

“Pica” is the term used to describe craving for non-food and non-nutritive items like dirt, chalk, or paper. Pagophagia (compulsive ice chewing) is a particular form of pica that is characterized by ingestion of ice, freezer frost, or iced drinks. It is usually associated with iron deficiency anemia or mental abnormalities like intellectual disabilities, autism, etc. Very few case reports have reported association of eating ice cubes with compulsive behavior or depressive disorders. In this case report, we present the association of pagophagia with sadness in a patient with recurrent depressive disorder. A 44-year-old female suffering from depressive disorder since the age of 33 years presented with symptoms of an intense desire to eat ice cubes that she was unable to resist and would feel better only after consumption of ice cubes or iced drinks. Initially she would consume about 250–500 g of ice cubes per day, but gradually the quantity of consumption of ice increased to about 10–12 kg of ice cubes per day. These symptoms were related to low mood and stress. The preoccupation with consumption of ice was associated with significant psychosocial dysfunction and interpersonal problems with the spouse. She was managed with venlafaxine 187.5 mg/day and cognitive behavior psychotherapy (identifying her cognitive errors, generating alternative thoughts, problem solving, activity scheduling and mastery, and pleasure technique) with which her depressive symptoms improved and her pagophagia reduced significantly but did not subside completely. She learned to use alternative coping mechanisms to deal with her psychosocial stressors.

Keywords: Pagophagia, Pica, Depression

INTRODUCTION

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association 2012), pica is characterized by “the persistent eating of non-nutritive, non-food substances over a period of at least one month, without an association with an aversion to food”. Diagnosis also requires that the eating of non-nutritive, non-food substances must be inappropriate to the developmental level and not part of a culturally supported or socially normative practice (Edwards et al. 1994). If the eating behavior exclusively occurs in the context of another mental disorder, a separate diagnosis of pica should be made only if the eating behavior is sufficiently severe to warrant the additional clinical attention.

The DSM-5 manual states that the condition is frequently associated with intellectual disability but it has been seen in all ages and subjects of both genders, and particularly in young children and pregnant women (¹). In some cultures pica is considered normal and even therapeutic, falling outside of the DSM-5 definition of a disorder (American Psychiatric Association, 2012; Parry Jones, 2009).

Pagophagia (compulsive ice chewing) is a particular form of pica that is characterized by ingestion of ice, freezer frost, or iced drinks (Parry Jones, 2009; Hata et al, 2009; Bhatia & Kaur, 2014; Sontag et al, 2001; Bhatia et al, 2005; Bhatia & Gupta, 2009; Barton et al,2010). It is considered to be an expression of the more general phenomenon of pica (American
Psychiatric stressors. She learned to use alternative coping mechanisms to deal with which her depressive symptoms improved and her pargaphagia, activity scheduling and mastery, and pleasure technique) with cognitive behavior psychotherapy (identifying her cognitive symptoms were associated with life stressors, and over the previous 5 years, she had started consuming ice cubes to cope with her stress. According to the patient, whenever she would be tense or would feel low, she would have an intense desire to eat ice cubes that she would be unable to resist and would feel better only after consumption of ice cubes or iced drinks. Initially she would consume about 250–500 g of ice cubes per day, but gradually the quantity of consumption of ice increased to about 10–12 kg of ice cubes per day. The preoccupation with consumption of ice was to such an extent that she would spend hours in purchasing/procuring/making ice cubes, and this led to significant psychosocial dysfunction that she would spend hours in managing and procuring ice, she denied any obsession or compulsion. In terms of phenomenology, pica is understood as more akin to addictive behaviors and obsessive-compulsive symptoms, impulse dyscontrol, substance use, or features suggestive of eating disorders. Physical examination did not reveal any abnormality, and investigations in the form of hemogram including blood film, serum ferritin levels, renal function test, liver function test, serum electrolytes, ultrasound of abdomen and pelvis, and thyroid function test did not reveal any abnormalities. On the basis of the available history, a diagnosis of recurrent depressive disorder, current episode of moderate depression without somatic symptoms was made, and she was managed with venlafaxine 187.5 mg/day and cognitive behavior psychotherapy (identifying her cognitive errors, generating alternative thoughts, problem solving, activity scheduling and mastery, and pleasure technique) with which her depressive symptoms improved and her pargaphagia was significantly reduced but did not subside completely. She learned to use alternative coping mechanisms to deal with her psychosocial stressors.

Case Report

A 44-year-old female presented to psychiatry outpatient services for the treatment of her recurrent depressive disorder, current episode of moderate depression without somatic symptoms. History revealed that the patient was suffering from depressive disorder since the age of 33 years. Her depressive symptoms were associated with life stressors, and over the previous 5 years, she had started consuming ice cubes to cope with her stress. According to the patient, whenever she would be tense or would feel low, she would have an intense desire to eat ice cubes that she would be unable to resist and would feel better only after consumption of ice cubes or iced drinks. Initially she would consume about 250–500 g of ice cubes per day, but gradually the quantity of consumption of ice increased to about 10–12 kg of ice cubes per day. The preoccupation with consumption of ice was to such an extent that she would spend hours in purchasing/procuring/making ice cubes, and this led to significant psychosocial dysfunction and interpersonal problems. The consumption of ice would not be affected by the season. There was no associated history of consumption of any other non-edible thing, obsessive-compulsive symptoms, impulse dyscontrol, substance use, or features suggestive of eating disorders. Physical examination did not reveal any abnormality, and investigations in the form of hemogram including blood film, serum ferritin levels, renal function test, liver function test, serum electrolytes, ultrasound of abdomen and pelvis, and thyroid function test did not reveal any abnormalities. On the basis of the available history, a diagnosis of recurrent depressive disorder, current episode of moderate depression without somatic symptoms was made, and she was managed with venlafaxine 187.5 mg/day and cognitive behavior psychotherapy (identifying her cognitive errors, generating alternative thoughts, problem solving, activity scheduling and mastery, and pleasure technique) with which her depressive symptoms improved and her pargaphagia was significantly reduced but did not subside completely. She learned to use alternative coping mechanisms to deal with her psychosocial stressors.

DISCUSSION

Pica is an unusual craving for and ingestion of either edible or inedible substances. The condition has been described in medical journals for centuries (Coltman 1969; Kushner et al. 2004; Grotenet et al. 2006). The term pica comes from the Latin for “magpie,” a bird known for its indiscriminate and unusual eating habits (Bhatia & Singhal. 2012; Tewari et al. 1995). One of the first cases of pica was noted in the 6th century AD and was observed in a pregnant woman (Coltman 1969). Since then, many cases of pica have been reported where patients have acknowledged ingesting ice cubes (pagophagia), clay (geophagia), dried pasta (amylophagia), chalk, starch, paste, Kayexalate resin (resinphagia), tomatoes, lemons, cigarette butts, hair, lead, and laundry starch (for example, Argo out of the box) (Coltman 1969; Kushner et al. 2004; Grotenet et al. 2006; Grivetti 1978; Hackworth & Williams 2003; Kathula 2008; Tisman 1970).

The exact prevalence of pagophagia is unknown. Edwards et al. (1994) studied pica in 553 urban, pregnant, otherwise healthy African-American women and reported pagophagia in 8.1% of respondents. These patients also had low ferritin levels and mean corpuscular volumes. In our patient, pagophagia was related to stress and feelings of sadness. Similar to our case, some of the authors have also reported pagophagia to be associated with a smaller social support network, and they hypothesized the behavior to be a method of alleviating stress (Edwards et al. 1994). However, in contrast to the earlier reports, the index case did not have any associated anemia and was able to clearly report pagophagia as a coping mechanism.

In terms of phenomenology, pica is understood as more akin to addictive behaviors and obsessive-compulsive behaviors (Parr Jones 2009; Lacey 1990; Sayetta 1986). In the index case, patient reported intense desire to eat ice cubes whenever she would have stress at her home or in her environment. Though she would spend a significant amount of time in making and procuring ice, she denied any obsession or compulsion. In terms of pharmacological management of pica, drugs that enhance dopaminergic activities have been suggested to be of benefit (8). SSRIs have also been shown to be very effective (Bhatia & Kaur 2014; Bhatia and Gupta 2009; Barton et al. 2010). However, the treatment must be decided upon according to the treatment settings for associated psychiatric disorders or physical treatment.

DSM-5 made significant changes for pica disorder in that it relocated it from the section titled “Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence,” (American Psychiatric Association, 2000) to the newly proposed section, “Feeding and Eating Disorders” (American Psychiatric Association, 2012). This change emphasizes that these disorders occur across all ages, including adulthood. Also, specifiers for severity and course have been suggested...
for each of these disorders in keeping with DSM-5 format (American Psychiatric Association, 2012). The sine qua non of pica is the recurring ingestion of non-nutritive substances (American Psychiatric Association, 2000). Changes to phrasing of diagnostic criteria in DSM-5 are intended to guide clinicians in distinguishing eating behaviors that warrant a diagnosis of pica from behaviors that are developmentally normal, culturally supported, or socially normative, or that support a diagnosis of a different mental disorder. Individuals with pica may consume an eclectic variety of substances, including mud, pottery, clay, and laundry starch. Pica eating of numerous other substances, such as paper, tissues, wood, plastic straws, soap, cloth, carpet, hair, string, wool, paint, gum, metal, pebbles, chalk, charcoal, coal, and ash, has also been reported. Substances consumed may vary with age or availability. Persistent consumption of food starches, such as cornstarch and uncooked pasta or rice, does not meet the diagnostic criterion for non-nutritive substances. Likewise, persistent consumption of ice does not satisfy pica criteria since it is a food. However, if not regarded as food within local norms, consumption of freezer frost, also widely reported, would potentially meet criteria for pica. In addition to heterogeneity of substances consumed, pica’s associated behavioral features can differ considerably among individuals (e.g., its compulsive nature and relationship to emotional arousal or need for oral stimulation). Many individuals with pica display a compulsion to eat particular substances and may describe a craving or strong urge to consume the substance due to its taste or consistency (Smulian et al. 1995). In some younger patients, as well as those with neuro-developmental or learning disorders, some clinicians regard pica as a form of self-soothing behavior, engaged in when arousal reaches a particular level. Available evidence suggests that the prevalence of pica eating varies widely across diverse social and clinical contexts and appears to be higher among select populations that include pregnant women, children (Khan et al. 2009; Geissler et al. 1998), adults with iron deficiency (Moore & Sears. 1994), and institutionalized persons (McAlpine & Singh. 1996). However, the prevalence of pica, the disorder, in these special populations is largely unknown since published studies generally omit key data essential for ascertaining the diagnosis, such as the behavior’s persistence, duration, and relativity to local social norms. Available data suggest that pica eating and by extension, pica, is rare in healthy children older than 2 years in the US (Matchi & Cohen. 1990). However, a study reported that 33.9% of Detroit children in treatment for sickle cell anemia had pica eating (Ivascu et al. 2001).

To conclude, this case report highlights a unique case of recurrent depressive disorder in which the patient indulged in pagophagia as a coping mechanism to deal with her day-to-day stress and to overcome her low mood.


